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APPLICATION NO.	FILING DATE	FIRST NAMED INVENTOR	ATTORNEY DOCKET NO.	CONFIRMATION NO.
10/648,101	08/25/2003	Forrest B. Fencl	S002-P03096US	3136

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EXAMINER	
CHAUDHRY, SAEED T	

ART UNIT	PAPER NUMBER
1746	

DATE MAILED: 07/13/2004

Please find below and/or attached an Office communication concerning this application or proceeding.

Office Action Summary	Application No.	Applicant(s)	
	10/648,101	FENCL ET AL.	
	Examiner	Art Unit	
	Saeed T Chaudhry	1746	

-- The MAILING DATE of this communication appears on the cover sheet with the correspondence address --

Period for Reply

A SHORTENED STATUTORY PERIOD FOR REPLY IS SET TO EXPIRE 3 MONTH(S) FROM THE MAILING DATE OF THIS COMMUNICATION.

- Extensions of time may be available under the provisions of 37 CFR 1.136(a). In no event, however, may a reply be timely filed after SIX (6) MONTHS from the mailing date of this communication.
- If the period for reply specified above is less than thirty (30) days, a reply within the statutory minimum of thirty (30) days will be considered timely.
- If NO period for reply is specified above, the maximum statutory period will apply and will expire SIX (6) MONTHS from the mailing date of this communication.
- Failure to reply within the set or extended period for reply will, by statute, cause the application to become ABANDONED (35 U.S.C. § 133). Any reply received by the Office later than three months after the mailing date of this communication, even if timely filed, may reduce any earned patent term adjustment. See 37 CFR 1.704(b).

Status

1)☐ Responsive to communication(s) filed on _____.

2a)☐ This action is **FINAL**. 2b)☒ This action is non-final.

3)☐ Since this application is in condition for allowance except for formal matters, prosecution as to the merits is closed in accordance with the practice under *Ex parte Quayle*, 1935 C.D. 11, 453 O.G. 213.

Disposition of Claims

4)☒ Claim(s) *24-43* is/are pending in the application.

4a) Of the above claim(s) _____ is/are withdrawn from consideration.

5)☐ Claim(s) _____ is/are allowed.

6)☒ Claim(s) *24-43* is/are rejected.

7)☐ Claim(s) _____ is/are objected to.

8)☐ Claim(s) _____ are subject to restriction and/or election requirement.

Application Papers

9)☐ The specification is objected to by the Examiner.

10)☐ The drawing(s) filed on _____ is/are: a)☐ accepted or b)☐ objected to by the Examiner.

Applicant may not request that any objection to the drawing(s) be held in abeyance. See 37 CFR 1.85(a).

Replacement drawing sheet(s) including the correction is required if the drawing(s) is objected to. See 37 CFR 1.121(d).

11)☐ The oath or declaration is objected to by the Examiner. Note the attached Office Action or form PTO-152.

Priority under 35 U.S.C. § 119

12)☐ Acknowledgment is made of a claim for foreign priority under 35 U.S.C. § 119(a)-(d) or (f).

a)☐ All b)☐ Some * c)☐ None of:

1.☐ Certified copies of the priority documents have been received.

2.☐ Certified copies of the priority documents have been received in Application No. _____.

3.☐ Copies of the certified copies of the priority documents have been received in this National Stage application from the International Bureau (PCT Rule 17.2(a)).

* See the attached detailed Office action for a list of the certified copies not received.

Attachment(s)

1) ☒ Notice of References Cited (PTO-892)
2) ☐ Notice of Draftsperson's Patent Drawing Review (PTO-948)
3) ☒ Information Disclosure Statement(s) (PTO-1449 or PTO/SB/08) Paper No(s)/Mail Date *8/03*.
4) ☐ Interview Summary (PTO-413) Paper No(s)/Mail Date. _____.
5) ☐ Notice of Informal Patent Application (PTO-152)
6) ☐ Other: _____.

DETAILED ACTION

Applicant's preliminary amendments and remarks filed August 25, 2003 have been acknowledged by the examiner and entered. Claims 1-23 have been canceled and claim 24-43 are pending in this application for consideration.

The Abstract

The Abstract of the Disclosure is objected to because it is directed to apparatus and method and not to a method as claimed herein. Correction is required. See M.P.E.P. § 608.01(b).

Double Patenting

Claims 29-33 are rejected under 35 U.S.C. 101 as claiming the same invention as that of claims 4-8 of prior U.S. Patent No. 6,627,000. This is a double patenting rejection.

U.S. Patent No. 6,627,000 claims the same process as claimed herein.

Claims 24-28, 35-43 are rejected under the judicially created doctrine of obviousness-type double patenting as being unpatentable over claims 4-27 of U.S. Patent No. 6,627,000.

U.S. Patent No. 6,627,000 claims all the limitations as claimed herein, except the limitations of "a tube and a plurality of spaced parallel fins", "coil face" or coil's tube, fins" and "temperature of the surfaces".

Although the conflicting claims are not identical, they are not patentably distinct from each other because 6,627,000 clean the heat transfer system, which includes coils and fines. Further, it is known that heat transfer system includes coils and parallel fins. Therefore, one of ordinary skill in the art would expect that directing the radiation towards the coil's tube and fins

(internal surface of heat transfer system as claimed by 6,627,000) would eliminate accumulated organic matter. Further, since 000' clean heat exchanger having cooling coil surface with UVC radiation. Therefore, one of ordinary skill in the art would expect that 58° F would be normal temperature for cooling coils, while heat exchanger is in operating mode. The apparatus of 000' provide UV radiation wave length of 253.7 nm in claims 1, 28 and 30. Therefore, one of ordinary skill in the art would use wave-length which is most efficient for removing the organic matter.

Claims 24-43 are rejected under the judicially created doctrine of obviousness-type double patenting as being unpatentable over claims 1-25 of U.S. Patent No. 6,500,267.

U.S. Patent No. 6,500,267 claims all the limitations as claimed herein, except the limitations of "controlling the airborne microorganisms" and "temperature of the surfaces. Although the conflicting claims are not identical, they are not patentably distinct from each other because 6,500,267 reduce the energy consumption in a heat exchanger system by radiating germicidal tube to remove organic matter. One of ordinary skill in the art would expect that by using germicidal tube would control the microorganisms in the heat transfer system. Further, one of ordinary skill in the art would except that internal surfaces and drain pan will be organically clean since 6,500,267 use UV tube to direct radiations toward the surface of the heat exchanger which include internal surfaces and drain pan. Even though 6,500,267 do not claim 58° F for surfaces but it would have been expected to of ordinary skill in the art that the heat exchanger would have been within this temperature, while heat exchanger is in running mode.

Claims 24-26, 28-36, 38-40 and 42-43 are rejected under the judicially created doctrine of obviousness-type double patenting as being unpatentable over claims 1-4, and 6-8 of U.S. Patent No. 5,817,276.

U.S. Patent No. 5,817,276 claims all the limitations as claimed herein, except that 276' claims "tube is perpendicular to the parallel planes of the fins". Further, 276' fails to specify temperature of the surfaces.

Although the conflicting claims are not identical, they are not patentably distinct from each other because claimed process use comprising language which do not exclude these limitations. Therefore, claimed process read on the 276' claims. Further, since 276' control the microorganisms of air treatment apparatus which have heat transfer coils. Therefore, one of ordinary skill in the art would expect that 58° F would be normal temperature for cooling coils, while heat exchanger is in operating mode.

Claims 24-43 are rejected under the judicially created doctrine of obviousness-type double patenting as being unpatentable over claims 1-10 of U.S. Patent No. 6,280,686.

U.S. Patent No. 6,280,686 claims all the limitations as claimed herein, except that 686' claims "tube is perpendicular to the parallel planes of the fins". Further, 686' fails to specify temperature of the surfaces.

Although the conflicting claims are not identical, they are not patentably distinct from each other because claimed process use comprising language which do not exclude these limitations. Therefore, claimed process read on the 686' claims. Further, since 686' control the microorganisms of air treatment apparatus which have heat transfer coils. Therefore, one of ordinary skill in the art would expect that 58° F would be normal temperature for cooling coils, while heat exchanger is in operating mode. Furthermore, one of ordinary skill in the art would

expect that this process would work for internal surfaces, drain pan because 686' claims radiating the heat transfer coil to control the microorganisms.

Claims 24-26, 28-36, 38-40 and 42-43 are rejected under the judicially created doctrine of obviousness-type double patenting as being unpatentable over claims 1-11 of U.S. Patent No. 6,245,293.

U.S. Patent No. 6,245,293 claims all the limitations as claimed herein, except that 293' claims "cleaning and maintaining" and "as new". Further, 293' fails to specify temperature of the surfaces.

Although the conflicting claims are not identical, they are not patentably distinct from each other because claimed process include a cleaning and maintaining heat exchanger by UV radiations. Therefore, one of ordinary skill in the art would expect to use the same process for controlling the presence of microorganism. Further, one of ordinary skill in the art would expect that this process would be used for coil's, fins, internal surfaces of the heat exchanger since 293' claims to use UV radiation for drain pan. Furthermore, 293' clean and maintain drain pan of the heat exchanger. Therefore, one of ordinary skill in the art would expect that 58° F would be normal temperature for drain pan, while heat exchanger is in operating mode.

Claims 24-26, 28-36, 38-40 and 42-43 are rejected under the judicially created doctrine of obviousness-type double patenting as being unpatentable over claims 1-2, 4-7, 9-15, 17-18 of U.S. Patent No. 6,267,924.

U.S. Patent No. 6,267,924 claims all the limitations as claimed herein, except that 924' claims "reducing and maintaining pressure drop of a heat exchanger" and "as new condition". Further, 924' fails to specify temperature of the surfaces.

Although the conflicting claims are not identical, they are not patentably distinct from each other because claimed process include a reducing and maintaining heat exchanger by UV radiations. Therefore, one of ordinary skill in the art would expect to use the same process for controlling the presence of microorganism. Further, one of ordinary skill in the art would expect that this process would be used for coil's, fins, internal surfaces and drain pan of the heat exchanger since 924' claims to use UV radiation for heat exchanger cooling system. Furthermore, 924' clean and maintain drain pan of the heat exchanger. Therefore, one of ordinary skill in the art would expect that 58° F would be normal temperature for drain pan, while heat exchanger is in operating mode.

> The non-statutory double patenting rejection, whether of the obvious-type or non-obvious-type, is based on a judicially created doctrine grounded in public policy (a policy reflected in the statute) so as to prevent the unjustified or improper timewise extension of the "right to exclude" granted by a patent. In re Thorington, 418 F.2d 528, 163 USPQ 644 (CCPA 1969); In re Vogel, 422 F.2d 438, 164 USPQ 619 (CCPA 1970); In re Van Ornam, 686 F.2d 937, 214 USPQ 761 (CCPA 1982); In re Longi, 759 F.2d 887, 225 USPQ 645 (Fed. Cir. 1985); and In re Goodman, 29 USPQ2d 2010 (Fed. Cir. 1993).
>
> A timely filed terminal disclaimer in compliance with 37 CFR 1.321 (b) and © may be used to overcome an actual or provisional rejection based on a non-statutory double patenting ground provided the conflicting application or patent is shown to be commonly owned with this application. See 37 CFR 1.78 (d).

Effective January 1, 1994, a registered attorney or agent of record may sign a Terminal Disclaimer. A Terminal Disclaimer signed by the assignee must fully comply with 37 CFR 3.73(b).

Claim Rejections - 35 USC § 102

The following is a quotation of the appropriate paragraphs of 35 U.S.C. § 102 that form the basis for the rejections under this section made in this Office action:

A person shall be entitled to a patent unless --
(a) the invention was known or used by others in this country, or patented or described in a printed publication in this or a foreign country, before the invention thereof by the applicant for a patent.
(b) the invention was patented or described in a printed publication in this or a foreign country or in public use or on sale in this country, more than one year prior to the date of application for patent in the United States.
(c) he has abandoned the invention.
(d) the invention was first patented or caused to be patented, or was the subject of an inventor's certificate, by the applicant or his legal representatives or assigns in a foreign country prior to the date of the application for patent in this country on an application for patent or inventor's certificate filed more than twelve months before the filing of the application in the United States.
(e) the invention was described in a patent granted on an application for patent by another filed in the United States before the invention thereof by the applicant for patent, or on an international application by another who has fulfilled the requirements of paragraphs (1), (2), and (4) of section 371(c) of this title before the invention thereof by the applicant for patent.
(f) he did not himself invent the subject matter sought to be patented.
(g) before the applicant's invention thereof the invention was made in this country by another who had not abandoned, suppressed, or concealed it. In determining priority of invention there shall be considered not only the respective dates of conception and reduction to practice of the invention, but also the reasonable diligence of one who was first to conceive and last to reduce to practice, from a time prior to conception by the other.

Claims 24-26, 29-33, 35-36, 39-40 and 43 are rejected under 35 U.S.C. 102(b) as being anticipated by Hollander.

Hollander (5,334,347) discloses a method for controlling the microorganism in a heat transfer unit, wherein a UV germicidal tube 51 is positioned adjacent to the coil and drain pan of the heat exchanger surface (see Fig. 5). The vertically disposed section of the U-shaped tube is positioned perpendicularly to the illustrated fins of the heat exchanger. In addition, the interior of the air treatment system can be made highly reflective material in order to intensify the effect of the UV radiation (see col. 7, lines 28-26). Sterilizing of the heat exchanger is done while air is passing and radiation is emits in the magnitude of 254 nm (see claim 10). Highly reflective material inherently reflect the UV radiations and increase the flux density of the UV radiation. Even though the reference did not disclose specifically the fins of a heat exchanger but heat exchangers are made with combination of fins and coils as shown in figures 4 and 5. Therefore, UV radiations are reflected from the fins surfaces since UV tube is in front of the coils and fins.

Claim Rejections - 35 USC § 103

The following is a quotation of 35 U.S.C. 103(a) which forms the basis for all obviousness rejections set forth in this Office action:

> (a) A patent may not be obtained though the invention is not identically disclosed or described as set forth in section 102 of this title, if the differences between the subject matter sought to be patented and the prior art are such that the subject matter as a whole would have been obvious at the time the invention was made to a person having ordinary skill in the art to which said subject matter pertains. Patentability shall not be negatived by the manner in which the invention was made.

The factual inquiries set forth in *Graham* **v.** *John Deere Co.*, 383 U.S. 1, 148 USPQ 459 (1966), that are applied for establishing a background for determining obviousness under 35 U.S.C. 103(a) are summarized as follows:

1. Determining the scope and contents of the prior art.
2. Ascertaining the differences between the prior art and the claims at issue.
3. Resolving the level of ordinary skill in the pertinent art.
4. Considering objective evidence present in the application indicating obviousness or nonobviousness.

Claims 27-28, 34, 37, 38 and 41-42 are rejected under 35 U.S.C. 103(a) as being unpatentable over Hollander.

Hollander was discussed supra. However, the reference fails to disclose UV radiation emits at 253.7 nm and the temperature of the surface is below 58° F.

It would have been obvious at the time applicant invented the claimed process to manipulate the wave length of the UV radiations because Hollander disclose to radiate the surface at 254 nm and show the effect of radiation at 254.7 nm which kill E-Coli bacteria. Therefore, one of ordinary skill in the art would manipulate the radiation wave length for better and efficient results. Further, Hollander disclosed to use Radiation while air is passing through the heat exchanger (see claim 10). Therefore, one of ordinary skill in the art would expect that the temperature of the heat exchanger surfaces would be 58 F or less.

Any inquiry concerning this communication or earlier communications from the examiner should be directed to Saeed T. Chaudhry whose telephone number is (571) 272-1298. The examiner can normally be reached on Monday-Friday from 9:30 A.M. to 4:00 P.M.

If attempts to reach the examiner by telephone are unsuccessful, the examiner's supervisor, Mr. Michael Barr, can be reached on (571)-272-1414. The fax phone number for non-final is (703)-872-9306.

When filing a FAX in Gp 1700, please indicate in the Header (upper right) "Official" for papers that are to be entered into the file, and "Unofficial" for draft documents and other communication with the PTO that are for entry into the file of the application. This will expedite processing of your papers.

Any inquiry of a general nature or relating to the status of this application should be directed to the Group receptionist whose telephone number is (571) 272-1700.

Saeed T. Chaudhry
Patent Examiner

MICHAEL BARR
PRIMARY EXAMINER